

(1) GENERAL INFORMATION:

- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:

(2) INFORMATION FOR SEQ ID NO: 2:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 1155 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:

ATG 48	AGG	TGG	ACT	TTG	GTG	GTC	TTG	TGT	CTG	CTG	TTC	GGT	GAA	GGG	TTC
Met -17	Arg	Trp -15	Thr	Leu	Val	Val	Leu -10	Cys	Leu	Leu	Phe	Gly -5	Glu	Gly	Phe
GCC 96	TTC	ACC	GAC	TGG	GAT	CAA	TAT	CAC	ATC	GTC	TGG	CAG	GAC	GAA	TTC
Ala	Phe 1	Thr	Asp	Trp	Asp 5	Gln	Tyr	His	Ile	Val 10	Trp	Gln	Asp	Glu	Phe 15
GAT 144	TAC	TTT	GAT	GGC	GCG	AAG	TGG	CAA	CAT	GAG	GTC	ACA	GCA	ACT	GGC
Asp	Tyr	Phe	Asp	Gly 20	Ala	Lys	Trp	Gln	His 25	Glu	Val	Thr	Ala	Thr 30	Gly
GGA 192	GGG	AAC	AGC	GAA	TTC	CAA	CTG	TAC	ACA	CAG	GAT	GGG	GCC	AAC	AGC
Gly	Gly	Asn 35	Ser	Glu	Phe	Gln	Leu	Tyr 40	Thr	Gln	Asp	Gly	Ala 45	Asn	Ser
TTC 240	GTT	CGA	GAT	GGA	AAG	CTT	TTC	ATT	AAG	CCG	ACG	TTG	CTG	GCT	GAC
Phe	Val	Arg 50	Asp	Gly	Lys	Leu	Phe 55	Ile	Lys	Pro	Thr	Leu 60	Leu	Ala	Asp
AAC 288	ATC	AAC	CCA	CAG	ACG	GGT	GCG	CCA	TTT	GGA	ACC	GAT	TTC	ATG	TAC
Asn	Ile 65	Asn	Pro	Gln	Thr	Gly 70	Ala	Pro	Phe	Gly	Thr 75	Asp	Phe	Met	Tyr
AAT 336	GGA	GTT	CTA	GAT	GTC	TGG	GCT	ATG	TAC	GGG	GCC	TGC	ACG	AAT	ACG
Asn 80	Gly	Val	Leu	Asp	Val 85	Trp	Ala	Met	Tyr	Gly 90	Ala	Cys	Thr	Asn	Thr 95
GAC 384	AAC	AAC	GGA	TGC	TAC	AGG	ACG	GGA	GCC	GCT	GGC	GAC	ATT	CCA	CCG
Asp	Asn	Asn	Gly	Cys 100	Tyr	Arg	Thr	Gly	Ala 105	Ala	Gly	Asp	Ile	Pro 110	Pro
GCC 432	ATG	TCG	GCA	CGA	GTT	CGA	ACC	TTC	CAG	AAA	TAC	AGC	TTC	ACC	CAC
Ala	Met	Ser	Ala	Arg	Val	Arg	Thr	Phe	Gln	Lys	Tyr	Ser	Phe	Thr	His

			115					120					125				
GGA 480	CGC	GTT	GTC	GTT	CAC	GCC	AAG	ATG	CCC	GTC	GGA	GAC	TGG	CTC	TGG		
Gly	Arg	Val	Val	Val	His	Ala	Lys	Met	Pro	Val	Gly	Asp	Trp	Leu	Trp		
		130				135						140					
CCA 528	GCC	ATT	TGG	ATG	TTG	CCG	GAG	GAT	TGG	GTC	TAT	GGC	GGA	TGG	CCT		
Pro	Ala	Ile	Trp	Met	Leu	Pro	Glu	Asp	Trp	Val	Tyr	Gly	Gly	Trp	Pro		
		145				150						155					
CGA 576	TCG	GGC	GAG	ATC	GAC	ATC	ATT	GAA	ACA	ATC	GGC	AAC	CGA	GAT	TTC		
Arg	Ser	Gly	Glu	Ile	Asp	Ile	Ile	Glu	Thr	Ile	Gly	Asn	Arg	Asp	Phe		
		160		165						170				175			
AAG 624	AAC	ACT	GGT	GGA	GAG	TTC	CTT	GGA	ATT	CAG	AAG	ATG	GGA	TCA	ACG		
Lys	Asn	Thr	Gly	Gly	Glu	Phe	Leu	Gly	Ile	Gln	Lys	Met	Gly	Ser	Thr		
				180				185						190			
ATG 672	CAC	TGG	GGT	CCA	GGA	TGG	GAC	GAC	AAC	CGA	TAC	TGG	CTG	ACC	AGC		
Met	His	Trp	Gly	Pro	Gly	Trp	Asp	Asp	Asn	Arg	Tyr	Trp	Leu	Thr	Ser		
		195						200						205			
CTT 720	CCG	AAA	CAC	TCA	GAC	GAT	TGG	AAC	TAC	GGT	GAC	AAC	TTC	CAC	ACG		
Leu	Pro	Lys	His	Ser	Asp	Asp	Trp	Asn	Tyr	Gly	Asp	Asn	Phe	His	Thr		
		210				215						220					
TTC 768	TGG	TTC	GAC	TGG	AGT	CCC	AAC	GGA	CTG	AGG	TTC	TTC	GTA	GAC	GAC		
Phe	Trp	Phe	Asp	Trp	Ser	Pro	Asn	Gly	Leu	Arg	Phe	Phe	Val	Asp	Asp		
		225				230				235							
GAG 816	AAC	CAG	GCT	CTG	CTC	GAT	GTT	CCT	TAT	CCT	CTG	ATT	GAT	GCG	AAT		
Glu	Asn	Gln	Ala	Leu	Leu	Asp	Val	Pro	Tyr	Pro	Leu	Ile	Asp	Ala	Asn		
		240		245						250				255			
CCA 864	TGG	TGG	GTG	GAT	TTC	TGG	GAG	TGG	GGA	AAG	CCC	TGG	CTT	CCT	CAA		
Pro	Trp	Trp	Val	Asp	Phe	Trp	Glu	Trp	Gly	Lys	Pro	Trp	Leu	Pro	Gln		
				260				265						270			
TAC 912	GAA	AAT	GAC	AAT	CCA	TGG	GCT	GGA	GGA	ACG	AAC	CTG	GCT	CCC	TTC		
Tyr	Glu	Asn	Asp	Asn	Pro	Trp	Ala	Gly	Gly	Thr	Asn	Leu	Ala	Pro	Phe		
		275						280				285					
GAC 960	CAA	AAT	TTC	CAC	TTC	ATT	CTG	AAC	GTG	GCT	GTC	GGA	GGA	ACG	AAC		
Asp	Gln	Asn	Phe	His	Phe	Ile	Leu	Asn	Val	Ala	Val	Gly	Gly	Thr	Asn		
		290				295						300					
GGC 1008	TTC	ATC	CCG	GAC	GGT	TGC	ATC	AAT	CGC	GGC	GGA	GAC	CCG	GCC	CTG		
Gly	Phe	Ile	Pro	Asp	Gly	Cys	Ile	Asn	Arg	Gly	Gly	Asp	Pro	Ala	Leu		
		305				310				315							
CAG 1056	AAG	CCG	TGG	AGC	AAT	GGG	GAC	TGG	TAC	AAC	GAT	GCA	ATG	AGG	AAA		
Gln	Lys	Pro	Trp	Ser	Asn	Gly	Asp	Trp	Tyr	Asn	Asp	Ala	Met	Arg	Lys		
		320		325				330						335			

TGA
1155

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:

Met -17	Arg	Trp -15	Thr	Leu	Val	Val	Leu -10	Cys	Leu	Leu	Phe	Gly -5	Glu	Gly	Phe
Ala	Phe 1	Thr	Asp	Trp	Asp 5	Gln	Tyr	His	Ile	Val 10	Trp	Gln	Asp	Glu	Phe 15
Asp —	Tyr	Phe	Asp	Gly 20	Ala	Lys	Trp	Gln	His 25	Glu	Val	Thr	Ala	Thr 30	Gly
Gly	Gly	Asn	Ser 35	Glu	Phe	Gln	Leu	Tyr 40	Thr	Gln	Asp	Gly	Ala 45	Asn	Ser
Phe	Val	Arg 50	Asp	Gly	Lys	Leu	Phe 55	Ile	Lys	Pro	Thr	Leu 60	Leu	Ala	Asp
Asn	Ile 65	Asn	Pro	Gln	Thr	Gly 70	Ala	Pro	Phe	Gly	Thr 75	Asp	Phe	Met	Tyr
Asn 80	Gly	Val	Leu	Asp	Val 85	Trp	Ala	Met	Tyr	Gly 90	Ala	Cys	Thr	Asn	Thr 95
Asp	Asn	Asn	Gly	Cys 100	Tyr	Arg	Thr	Gly	Ala 105	Ala	Gly	Asp	Ile	Pro 110	Pro
Ala	Met	Ser	Ala 115	Arg	Val	Arg	Thr	Phe 120	Gln	Lys	Tyr	Ser	Phe 125	Thr	His
Gly	Arg	Val 130	Val	Val	His	Ala	Lys 135	Met	Pro	Val	Gly	Asp 140	Trp	Leu	Trp
Pro	Ala 145	Ile	Trp	Met	Leu	Pro 150	Glu	Asp	Trp	Val	Tyr 155	Gly	Gly	Trp	Pro
Arg 160	Ser	Gly	Glu	Ile	Asp 165	Ile	Ile	Glu	Thr	Ile 170	Gly	Asn	Arg	Asp	Phe 175
Lys	Asn	Thr	Gly	Gly 180	Glu	Phe	Leu	Gly	Ile 185	Gln	Lys	Met	Gly	Ser 190	Thr
Met	His	Trp	Gly 195	Pro	Gly	Trp	Asp	Asp 200	Asn	Arg	Tyr	Trp	Leu 205	Thr	Ser

Leu	Pro	Lys 210	His	Ser	Asp	Asp	Trp 215	Asn	Tyr	Gly	Asp	Asn 220	Phe	His	Thr
Phe	Trp 225	Phe	Asp	Trp	Ser	Pro 230	Asn	Gly	Leu	Arg	Phe 235	Phe	Val	Asp	Asp
Glu 240	Asn	Gln	Ala	Leu	Leu 245	Asp	Val	Pro	Tyr	Pro 250	Leu	Ile	Asp	Ala	Asn 255
Pro	Trp	Trp	Val	Asp 260	Phe	Trp	Glu	Trp	Gly 265	Lys	Pro	Trp	Leu	Pro 270	Gln
Tyr	Glu	Asn	Asp 275	Asn	Pro	Trp	Ala	Gly 280	Gly	Thr	Asn	Leu	Ala 285	Pro	Phe
Asp	Gln	Asn 290	Phe	His	Phe	Ile	Leu 295	Asn	Val	Ala	Val	Gly 300	Gly	Thr	Asn
Gly	Phe 305	Ile	Pro	Asp	Gly	Cys 310	Ile	Asn	Arg	Gly	Gly 315	Asp	Pro	Ala	Leu
Gln 320	Lys	Pro	Trp	Ser	Asn 325	Gly	Asp	Trp	Tyr	Asn 330	Asp	Ala	Met	Arg	Lys 335
Phe	Phe	Asp	Ala	Arg 340	Gly	Asn	Trp	Lys	Trp 345	Thr	Trp	Asp	Asp	Glu 350	Gly
Asp	Asn	Asn	Ala 355	Met	Gln	Val	Asp	Tyr 360	Ile	Arg	Val	Tyr	Lys 365	Arg	Asn

<120> Peptides and nucleic acids derived from *Eisenia foetida*
and the use thereof

<140> PCT/EP98/08169

<150> 97203974.7

<160> 3

 $\langle 210 \rangle$ 1

<212> PRT

 $\langle 400 \rangle$ 1

1 5 10

<211> 1155

<213> Eisenia fetida

<221> sig_peptide

 $\langle 220 \rangle$

<221> mat_peptide

 $\langle 220 \rangle$

<221> CDS

$\langle 222 \rangle$ (1)..(1152)

<400> 2

atg agg tgg act ttg gtg gtc ttg tgt ctg ctg ttc ggt gaa ggg ttc 48
Met Arg Trp Thr Leu Val Val Leu Cys Leu Leu Phe Gly Glu Gly Phe
-15 -10 -5

gcc ttc acc gac tgg gat caa tat cac atc gtc tgg cag gac gaa ttc 96
Ala Phe Thr Asp Trp Asp Gln Tyr His Ile Val Trp Gln Asp Glu Phe
-1 1 5 10 15

gat tac ttt gat ggc gcg aag tgg caa cat gag gtc aca gca act ggc 144
Asp Tyr Phe Asp Gly Ala Lys Trp Gln His Glu Val Thr Ala Thr Gly
20 25 30

gga ggg aac agc gaa ttc caa ctg tac aca cag gat ggg gcc aac agc 192
Gly Gly Asn Ser Glu Phe Gln Leu Tyr Thr Gln Asp Gly Ala Asn Ser
35 40 45

ttc gtt cga gat gga aag ctt ttc att aag ccg acg ttg ctg gct gac 240
Phe Val Arg Asp Gly Lys Leu Phe Ile Lys Pro Thr Leu Leu Ala Asp
50 55 60

aac atc aac cca cag acg ggt gcg cca ttt gga acc gat ttc atg tac 288
Asn Ile Asn Pro Gln Thr Gly Ala Pro Phe Gly Thr Asp Phe Met Tyr
65 70 75

aat gga gtt cta gat gtc tgg gct atg tac ggg gcc tgc acg aat acg 336
Asn Gly Val Leu Asp Val Trp Ala Met Tyr Gly Ala Cys Thr Asn Thr
80 85 90 95

gac aac aac gga tgc tac agg acg gga gcc gct ggc gac att cca ccg 384
Asp Asn Asn Gly Cys Tyr Arg Thr Gly Ala Ala Gly Asp Ile Pro Pro
100 105 110

gcc atg tgg gca cga gtt cga acc ttc cag aaa tac agc ttc acc cac 432
Ala Met Ser Ala Arg Val Arg Thr Phe Gln Lys Tyr Ser Phe Thr His
115 120 125

gga cgc gtt gtc gtt cac gcc aag atg ccc gtc gga gac tgg ctc tgg 480
Gly Arg Val Val Val His Ala Lys Met Pro Val Gly Asp Trp Leu Trp
130 135 140

cca gcc att tgg atg ttg ccg gag gat tgg gtc tat ggc gga tgg cct 528
Pro Ala Ile Trp Met Leu Pro Glu Asp Trp Val Tyr Gly Gly Trp Pro
145 150 155

cga tgg ggc gag atc gac atc att gaa aca atc ggc aac cga gat ttc 576

0956101-061600

1. The first part of the document is a list of references. The references are listed in alphabetical order of the author's name. The references are as follows:

ttc ttc gac gcc aga gga aac tgg aag tgg acg tgg gat gac gag gga 1104
Phe Phe Asp Ala Arg Gly Asn Trp Lys Trp Thr Trp Asp Asp Glu Gly
340 345 350

Addendum

1. PEPTIDES AND NUCLEIC ACIDS DERIVED FROM EISENIA FOETIDA AND THE USE THEREOF

0959101-0641000